

Densities: Review Density Asphalt Cores QA

Objectives

Review Density Asphalt Core QA Overview

Enter Asphalt Core QA

Retrieve/Review Existing Asphalt Core QA

Delete Existing Asphalt Core QA

About QA Asphalt Core Density

The state QA Lab personnel collect the QA cores at the producer's facility and bring them back for testing at the QA Lab. The results of these tests are recorded in the QA Lab's logbook for that contract and mix type.

This portion of the densities module will provide that same functionality in HiCAMS. The QA Lab personnel will enter their results into the window provided (see below for screen shot and field descriptions). They will also be able to review corresponding QC core results that have been entered by the RE staff and determine if the results are within limits of precision as required by the state's HMA/QMS program.

Overview

The QA Asphalt Core Density module of HiCAMS provides tracking and logging of QA asphalt core density test results in a centralized location. It also facilitates the correlation of QA asphalt core density test results with the QC asphalt core density test results entered by the RE staff. This functionality includes, but is not limited to:

- Logging of all QA asphalt core density test results for a project
- Correlation of QA and QC asphalt core density test results
- Tracking of QA to QC sample ratios
- Tracking of QA Verification to QA sample tracking ratios

Authorized Users

The staff members who will have the ability to create, verify and update QA Asphalt Core Density records are:

- QA Lab Personnel

The staff members who will have inquiry privileges to QA Asphalt Core Density records are:

- All staff

Window Descriptions

The following window is used for entering and reviewing Asphalt Core QA density data:

Review Density Asphalt Cores QA (C105505)

Contract: C105505 Contractor: THE LANE CONSTRUCTION CORP. Work Order: 8.1370305 Status: Activated

Material: Asphalt Concrete Base Course, Type HB - Tons

Results History

| Placed Date | JMF | Core | Core Type | % Comp. | Roadway Tech. Cert. | Lab Tech. Cert. | Pass | Corr. Accept. | Corr. Revwd. | Paving Contractor |
|-------------|------------|------|-----------|---------|---------------------|-----------------|------|---------------|--------------------------|-------------------|
| 10/10/2001 | 00-100-031 | 3 | QA | 87.0 | 4 | 4 | No | No | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 1 | QA | 70.0 | 4 | 729 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 1 | QA Retest | 80.0 | 4 | 729 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 2 | QA | 89.0 | 4 | 4 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 4 | QA | 99.0 | 4 | 4 | Yes | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 5 | QA | 100.0 | 4 | 4 | Yes | | <input type="checkbox"/> | 7 STAR CONSTRUCT |

Rdwy. Technician: Bracy, Anthony R Lab Technician: Bracy, Anthony R

JMF Min. % Comp.: 92.0 QA Sample Status: Correlated QC % Comp.: 78.0

Comment:

Fields

- **Contract:** The HiCAMS contract number. Entered by user or selected from the Contract Selection window when the selection icon is clicked. REQUIRED.
- **Contractor:** Contractor firm name for the selected contract. Provided by HiCAMS.
- **Work Order:** The primary work order number for the selected contract number. Provided by HiCAMS.
- **Status:** The contract status.
- **Material:** A list of asphalt materials available on the contract selected.
- **Date Placed:** Date material was placed on the project, regardless of date sample was taken. Entered by user. REQUIRED.

- **JMF:** The Job Mix Formula number for the sample. Entered by user or selected from the JMF Selection window when the selection icon is clicked. REQUIRED.
- **Core:** The QA sample number. Entered by user. REQUIRED.
- **Core Type:** The type of QA sample taken. Selected from the dropdown list by user. REQUIRED. These are the valid types:
 - QA
 - Retest QA
 - Verification QA
- **% Comp:** The percent compaction of the QA sample based on the Target Specific Gravity and the QA Specific Gravity. Provided by HiCAMS.
- **Roadway Tech. Cert:** The roadway technician's HiCAMS certification number. If this number is not known, the user can click on the staff icon and select a Technician by name through the Technician Selection Window. Entered by the user. REQUIRED.
- **Lab Tech. Cert:** The lab technician's HiCAMS certification number. If this number is not known, the user can click on the staff icon and select a Technician by name through the Technician Selection Window. Entered by the user. REQUIRED.

Note: A "generic" technician has been provided for selection in the event that the actual technician performing the test does not possess a valid certification. A comment is required when this technician is selected, and a notification is sent to the Pavement Construction Section.

- **Pass:** When test result is saved, HiCAMS will set to "Yes" or "No" depending upon minimum % compaction of the associated JMF.
- **Corr. Accept:** If HiCAMS successfully correlates a QC sample, this field will be populated. If no correlation has been made, it will be blank.

Note: When a correlation is made, HiCAMS will compare the QA % Compaction with the QC % Compaction. For those test

types of “QA” and “QA Verify”, the field will display “Yes” if the two results are within 2% of each other.

For the “QA Retest” type, the field will display “Yes” if the two results are within 1.2% of each other.

- **Corr. Revwd:** This checkbox indicates that the QA sample has been presented to a HiCAMS user for review. When a user enters a HiCAMS QA sample, and the corresponding QC sample is found by HiCAMS, then this box is checked by HiCAMS. The user cannot access this checkbox at this point.
- **Paving Contractor:** Enter the number of the contractor, use the Vendor button to launch the **Contractor Selection** window.
- **Rdwy Technician:** The name of the Roadway Technician. Provided by HiCAMS as a result of the technician number entered in the test result.
- **Lab Technician:** The name of the Lab Technician. Provided by HiCAMS as a result of the technician number entered in the test result.
- **JMF Min. % Comp.:** The minimum percent compaction of the JMF entered.
- **QA Sample Status:**
 - *Correlated* – Indicates that HiCAMS has found a QC sample that has the same Contract, Date Placed, Sample Number and JMF as the QA sample.
 - *Not Correlated* – Indicates that HiCAMS could not find a QC sample that has the same Contract, Date Placed, Sample Number and JMF as the QA sample.
- **QC % Comp.:** The percent compaction of the QC sample. Provided by HiCAMS, when a QC sample has been correlated. If no correlation, this field is blank.

The following is an example of the window used for reviewing QA Core density historical information:

Review Density Asphalt Cores QA (C105505)

Contract: C105505 Contractor: THE LANE CONSTRUCTION CORP. Work Order: 8.1370305 Status: Activated

Material: Asphalt Concrete Base Course, Type HB - Tons

Results History

| Action | Action Date | Core | Core Type | Status | Who | Comment |
|------------|---------------------|------|-----------|----------------|----------------------|---------------------------|
| Comment | 10/24/2001 15:58:00 | 1 QA | Retest | Correlated | Watts, Phillip M | gen spec 1-3 |
| Comment | 10/24/2001 15:59:00 | 1 QA | | Correlated | Watts, Phillip M | gen spec 1-4 |
| Comment | 10/24/2001 15:59:00 | 1 QA | Retest | Correlated | Watts, Phillip M | gen spec 1-4 |
| Comment | 10/24/2001 16:00:00 | 1 QA | Retest | Correlated | Watts, Phillip M | gen spec 1-5 |
| Comment | 10/24/2001 16:02:00 | 1 QA | | Correlated | Watts, Phillip M | gen spec 1-6 |
| Comment | 10/24/2001 16:02:00 | 1 QA | Retest | Correlated | Watts, Phillip M | gen spec 1-6 |
| Create | 10/26/2001 17:03:00 | 2 QA | | Not Correlated | Watts, Phillip M | |
| Create | 10/26/2001 17:07:00 | 3 QA | | Not Correlated | Watts, Phillip M | |
| Create | 10/26/2001 17:16:00 | 4 QA | | Not Correlated | Watts, Phillip M | |
| Create | 10/26/2001 17:16:00 | 5 QA | | Not Correlated | Watts, Phillip M | |
| Set Status | 10/29/2001 17:15:00 | 1 QA | | Correlated | Batch_job, Batch_job | A qa density record has b |
| Set Status | 10/29/2001 17:15:00 | 1 QA | Retest | Correlated | Batch_job, Batch_job | A qa density record has b |
| Set Status | 10/29/2001 18:18:00 | 1 QA | | Correlated | Batch_job, Batch_job | A qa density record has b |
| Set Status | 10/29/2001 18:18:00 | 1 QA | Retest | Correlated | Batch_job, Batch_job | A qa density record has b |
| Set Status | 10/29/2001 18:19:00 | 1 QA | | Not Correlated | Batch_job, Batch_job | The link between the qa a |
| Set Status | 10/29/2001 18:19:00 | 1 QA | Retest | Not Correlated | Batch_job, Batch_job | The link between the qa a |
| Set Status | 10/30/2001 04:17:00 | 3 QA | | Correlated | Batch_job, Batch_job | A qa density record has b |

☒ Show History For All Tests

Fields

- **Action:** Indicates the action taken that caused the entry into the history:
 - *Comment* – A comment was added to an existing sample
 - *Create* – A new sample was entered
 - *Modify* – Data for an existing sample was modified
 - *Delete* – A sample was deleted
- **Action Date:** This is the date the action was performed in HiCAMS.
- **Core:** Displays the original sample number if one or more of the following are changed: sample number, sample type, date placed, JMF, QA Specific Gravity, Target Specific Gravity.
- **Core Type:** Displays the original sample type if one or more of the following are changed: sample number, sample type, date placed, JMF, QA Specific Gravity, Target Specific Gravity.
- **Status:** Displays the sample status resulting from the action performed.
- **Who:** The full name of the person performing the action.


- **Comment:** The comment associated to the selected history record.
- **Show History for all Tests:** To view all history, check this box.

Enter an Asphalt Core QA Sample


To enter or retrieve an Asphalt Core QA sample test result, perform the following steps:

Step 1: From the menubar, select **Functions® Density® Review Density Asphalt Cores QA**

The **Review Density Asphalt Cores QA** window displays.

Step 2: Enter the **Contract** number. If the contract number is unknown, click the book button next to the Contract entry field  to search for the contract number.

Note: *You may further refine your search by using the Location drop down list and selecting your Division in the **Contract Selection** window.*


Step 3: Enter the **Material** (aka Mix Type) by selecting it from the drop-down list. If you don't find the material tested, then it is currently not listed in the CBOM for the contract number entered. (See Chapter 4, Section 7 for adding items to the CBOM). You can also use the Material Selection window to search. 

Note: *Once the user selects a material, HiCAMS will retrieve:*

- *All pertinent information related to the contract and mix type*
- *All existing QA cores for that contract and mix type*
- *Any QC cores that respond to the shown QA cores*



Step 4: Enter the **Placed Date** indicating the date the material was installed on the project.

Step 5: Enter the **JMF**. If the JMF you entered is not found in HiCAMS, the "JMF Selection Window" will be opened and you can select a JMF from this window. If the JMF is

unknown, click the button next to the JMF entry field; this displays the “JMF Selection Window” 

The JMF selected must contain the material (aka mix-type) selected in the **Material** field above. If not, you will be presented with a warning message and not allowed to save your entry:



- Step 6:** Enter the number of the QA **Core**. Use the following numbering methods:
- The QA comparison cores and the corresponding QC Core samples will use the same number. If the QC core sample number is 10, the QA comparison core sample number entered is 10.
 - The QA comparison cores of *QC check* samples will carry the same base number, but it will be entered using the **Functions® Density® Review Density Asphalt Cores QA** window.
- Step 7:** Enter the **Core Type** of the QA Core (in this example, the type is “QA”).
- Step 8:** Enter the **Roadway Technician Certification** number of the technician that took this QA sample. If this number is unknown, you can click on the staff icon  to display the **Technician Selection** window.
- Step 9:** Enter the **Lab Technician Certification** number of the technician that performed the tests on this QA sample. If this number is unknown, you can click on the staff icon  to display the **Technician Selection** window.
- Step 10:** Select the Paving Contractor by clicking the Vendor icon next to the field.

Note: *If the Paving Contractor used is not part of the Vendor list, use the Producer/Supplier Request Form on the HiCAMS Web Page, or contact your Unit Information Systems Liaison.*

Step 11: Enter any other QA samples by clicking the Insert icon on the toolbar.

Step 12: **Save** the data you entered by clicking on the save icon. 

Note: *At this point,*

- *If the core fails, a Notification window will display, to notify the QA Supervisor. If the QA Supervisor has completed the entry into HiCAMS, the window will be blank. Click Send to complete process.*
- *HiCAMS will search for a QC Core that corresponds with the QA Core that has been entered and has the following matching characteristics:*
 - *Contract*
 - *Date Placed*
 - *Test Number*
 - *JMF*
- *If found, the following occurs:*
 - *The corresponding QC core sample's **QC Compaction** % is calculated and displayed at the bottom of the window*
 - *The **QA % Compaction** and the **QC % Compaction** are compared and if they are within the limits of precision, "Yes" will be displayed in the **Acceptable** column, otherwise, "No" will be displayed.*
 - *HiCAMS will set the **Reviewed** indicator.*
 - *The **QA Sample Status** will be set to "Correlated".*

Retrieve/review existing Asphalt Core QA Sample

Step 1: Follow **Steps 1-3** in the section **above Enter an Asphalt Core QA Sample**

Step 2: All existing cores will be displayed in date placed order with the most recent cores at the top of the list. Scroll up or down to view:

Review Density Asphalt Cores QA [C105505]

Contract: C105505 Contractor: THE LANE CONSTRUCTION CORP. Work Order: 8.1370305 Status: Activated

Material: Asphalt Concrete Base Course, Type HB - Tons

Results History

| Placed Date | JMF | Core | Core Type | % Comp. | Roadway Tech. Cert. | Lab Tech. Cert. | Pass | Corr. Accept. | Corr. Revwd. | Paving Contractor |
|-------------|------------|------|-----------|---------|---------------------|-----------------|------|---------------|-------------------------------------|-------------------|
| 10/10/2001 | 00-100-031 | 3 | QA | 87.0 | 4 | 4 | No | No | <input checked="" type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 1 | QA | 70.0 | 4 | 729 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 1 | QA Retest | 80.0 | 4 | 729 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 2 | QA | 89.0 | 4 | 4 | No | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 4 | QA | 99.0 | 4 | 4 | Yes | | <input type="checkbox"/> | 7 STAR CONSTRUCT |
| 10/10/2001 | 00-100-031 | 5 | QA | 100.0 | 4 | 4 | Yes | | <input type="checkbox"/> | 7 STAR CONSTRUCT |


Rdwy. Technician: Bracy, Anthony R Lab Technician: Bracy, Anthony R

JMF Min. % Comp.: 92.0 QA Sample Status: Correlated QC % Comp.: 78.0

Comment:

Note: If any core samples have a status of “Correlated”, but have not been set as “Reviewed”, these cores will appear at the bottom of the list, regardless of the date placed.


You may check the **Reviewed** checkbox next to any or all of these cores to indicate that the correlation has been reviewed.

Once you have checked the **Reviewed** checkbox, you can click on the “Save” icon to save the data.  The cores will then be re-sorted to date placed order. If there are any cores that do not have their “Reviewed” checkbox marked, they will continue to appear at the bottom of the list.

Delete an existing Asphalt Core QA Sample

Step 1: Follow **Steps 1-3** in the section above **Enter an existing Asphalt Core QA Sample**.

Step 2: Place your cursor on the line with the core you wish to delete.

Step 3: Click on the “Delete” icon.  A message will appear to verify the delete action.

Note: *The “No” button will be defaulted. You must click Yes to delete.*

Step 4: If Yes button clicked, you will be asked to save changes. Click Yes to save. If record deleted in error, click “No” and the record will be restored.

Step 5: Delete other QA cores as desired.